

# Living Mysteries

## Problem

How can you create a taxonomic key to help identify tree leaves?

## Skills Focus

observing, classifying, inferring

## Materials

a variety of leaves

hand lens

metric ruler

## Procedure

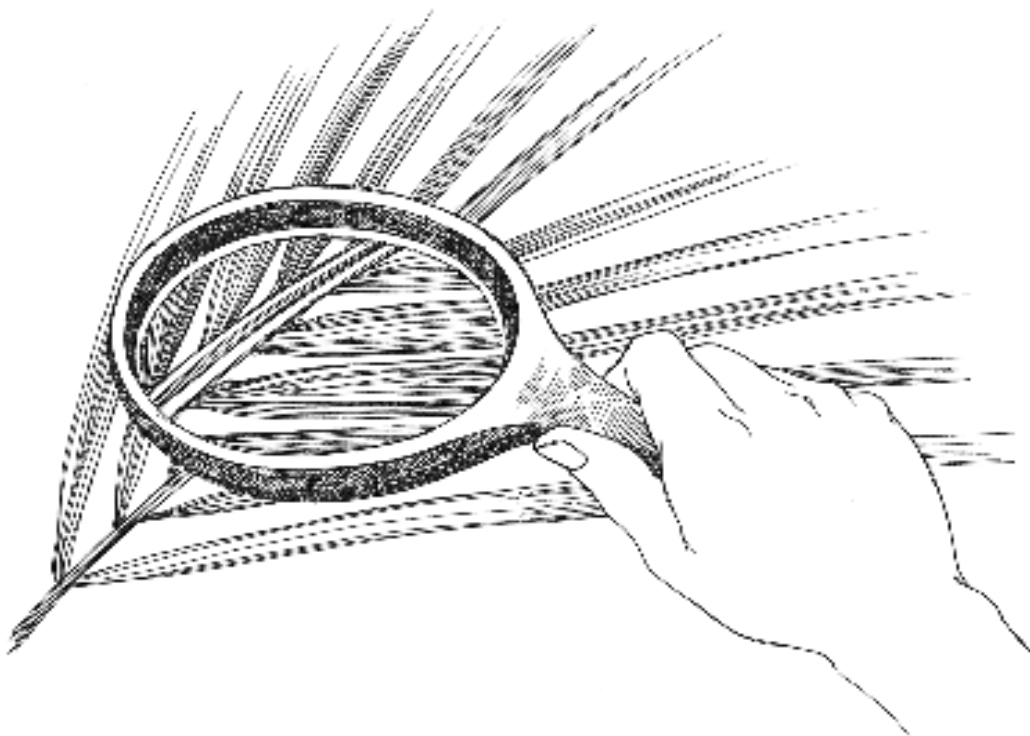


1. Your teacher will give you five different tree leaves. Handle the leaves carefully.
2. Use a hand lens to examine each of the leaves. Look for characteristics such as those described in the table. Make a list of five or more identifying characteristics for each leaf.
3. Use your observations to create a taxonomic key for the leaves. In creating your taxonomic key, use the characteristics you listed, along with any others that you observe. Remember that your taxonomic key should consist of paired statements, similar to the one shown in the chapter.
4. Exchange your leaves and taxonomic key with a partner. If your partner cannot identify all of the leaves using your key, revise your key as necessary.



**Living Things** ▪ *Skills Lab***Living Mysteries** *(continued)*

| Leaf Characteristics to Consider |  |
|----------------------------------|--|
| Characteristic                   | Observations   |
| Overall Shape                    | Is the leaf needlelike and narrow, or is it flat and wide? For a flat leaf, is it rounded, oblong, heart-shaped, or some other shape?      |
| Simple vs. Compound              | Is the leaf a single unit, or is it made up of individual leaflets? If it is made up of leaflets, how are they arranged on the leaf stalk? |
| Pattern of Veins                 | Do the leaf's veins run parallel from the central vein or do they form a branching pattern?  |
| Leaf Edges                       | Are the edges of the leaf jagged or smooth?  |
| Leaf Texture                     | Is the leaf's surface fuzzy, shiny, or another texture?  |



**Living Things** ▪ *Skills Lab*



**Analyze and Conclude**

*Write your answers on a separate sheet of paper.*

1. **Observing** How are your leaves similar or different from one another?
2. **Classifying** How did you decide which characteristics to use in your taxonomic key?
3. **Inferring** Choose one of your leaves and look back over the list of characteristics you used to classify it. Do you think every single leaf of the same type would share those characteristics? Explain.
4. **Communicating** Explain in your own words why a taxonomic key is helpful. Include in your explanation why it is important that the paired statements in a taxonomic key be contrasting statements.

**More to Explore**

Suppose you are hiking through the woods and see many flowers of different colors, shapes, and sizes. You decide to create a taxonomic key to help identify the flowers. What characteristics would you include in the key?